

REMARKS

In response to the Office Action dated December 15, 2005, Applicants respectfully request reconsideration.

Claims 1-8 were previously pending in this application. By this amendment, claim 1 is being amended. As a result, claims 1-8 are pending for examination with claims 1 and 7 being independent claims. No new matter has been added.

Objections to the Specification

The specification at page 1, lines 22-23, which read, "...which injects or not a current into each electrode column to turn on or not the column pixel" was objected to in the Office Action.

The specification at page 6, line 18, which read, "Reading interface 22 is connected..." was objected to in the Office Action.

Applicants have incorporated the changes suggested by the Examiner. Accordingly, withdrawal of this objection is respectfully requested.

Embodiments of the Present Invention

Embodiments of the present invention are directed to displaying images on a screen. To display an image, a frame is displayed by activating screen pixels line-by-line via addressing by a row control circuit. To save power, only lines that have at least one pixel to be activated are selected for addressing by the row control circuit. Because some of the lines of the screen are not addressed, the reading of memory rows corresponding to display lines is coordinated with display of the lines. Additionally, because it is desirable to maintain a constant frame display frequency regardless of the number of lines on the screen to be activated, the frequency of reading one line from memory and/or addressing one line of the screen is controlled based on the number of lines that are to be addressed. That is, if fewer lines are to be addressed, a lower one-line frequency is used, and if more lines are to be addressed, a higher one-line frequency is used.

Rejections Under 35 U.S.C. §102

The Examiner rejected claims 1-8 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,929,831 to Aratani et al. ("Aratani"). The rejection is respectfully traversed.

Aratani describes a method for displaying, on an array screen, an image stored in an image memory. The method includes preferentially selecting lines of the screen associated with rows of the image which have been updated. The remainder of the screen is scanned with an interlace scan, that is, a scan of every third line, every fourth line, or every fifth line, etc. depending on the type of interlace selected. Because Aratani is directed to a ferroelectric liquid crystal display panel (FLCD), the scanning speed, for example, the one-line scanning speed, depends on the temperature of the liquid crystal of the FLCD. Accordingly, a sync signal is used when transferring the data of one scanning line from the memory to the display screen. To generate the sync signal, a panel drive controller (24) detects a temperature of the liquid crystal of the FLCD (see column 5, lines 11-23).

Additionally, to maintain a scanning frequency (i.e., of the entire frame of the display screen) that is close to a display screen frequency (such as a CRT), Aratani describes a method for selecting the type of interlace to be used (e.g., a 3-field interlace in which every third line is scanned, or a 4-field interlace in which every fourth line is scanned, etc.). For example, given the scanning time for one horizontal line and the number of lines that have been updated (and therefore have to be scanned), a display control unit (42) of Aratani determines what fraction of the remaining non-updated lines should be scanned such that the overall scanning period is approximately equal to a display period.

As stated in column 8, lines 30-33 of Aratani, the display control unit (42) selects an interlace table (i.e., what fraction of lines to scan) according to a panel status signal (PST). Figure 8 shows one example of panel status codes that are associated with various one-line scanning times.

In summary, as discussed in column 7, lines 1-10 and column 8, lines 24-37 of Aratani, the one-line scanning time (which is the inverse of the one-line scanning frequency) is a set value determined by temperature, while the number of non-updated lines to be scanned is determined based on both the one-line scanning time and the number of updated lines.

Claims 1-6

Claim 1 is directed to a method for displaying an image on an array screen by activation of screen pixels arranged in lines and columns, each pixel of the same line corresponding to a memory point of a same row of memory, the memory point being set to an activation state when the corresponding pixel is to be activated. Claim 1 recites, *inter alia*, a step of determining a read clock signal based on a number of sets of identified rows. An identified row is a memory row in which at least one memory point is set at an activation state. The read clock signal is set to a frequency for reading each row of a set of memory rows (see page 4, lines 20-21 and page 5, lines 19-23 of the present application). This frequency is determined based on the number of lines that are to be scanned, that is, the number of memory rows that include at least one memory point in an activation state. One embodiment of this process is described on page 5, line 31 – page 6, line 9.

Here, the read clock signal is not fixed and thus, as claimed, the read clock signal is determined and that determination is based on the number of identified row sets.

Conversely, the clock frequency of Aratani is determined by the *temperature*. Aratani controls the period of a scan of the entire frame by adjusting the total number of lines scanned. To adjust the total number of lines scanned, Aratani uses the parameters of the set clock signal frequency (which is determined by temperature) and the number of flagged lines that must be scanned. Based on these parameters and the target frame scanning frequency, Aratani determines which interlace table to use, i.e., what fraction of remaining lines to scan.

Aratani simply does not teach or suggest determining a read clock signal *based on a number of sets of identified rows*, as recited in claim 1. Rather, Aratani determines the number of non-identified lines to scan based on a one-line scanning time that is determined by temperature. Accordingly, withdrawal of this rejection is respectfully requested.

Each of claims 2-6 depend either directly or indirectly from claim 1 and are therefore patentable for at least the same reasons cited above for claim 1. Accordingly, withdrawal of these rejections is respectfully requested.

Claims 7-8

Claim 7 is directed to a device for displaying an image on an array screen by activation of screen pixels arranged in lines and columns. The device includes a main memory with each pixel of a same screen line corresponding to a memory point of a same row of the main memory. Claim 7 recites, *inter alia*, a means for providing a read control signal transmitted to an addressing means, the frequency of which depends on the total number of rows of identified row sets. As discussed above with regard to claim 1, the frequency of the read control signal depends on the number of rows identified to include at least one memory point that is in an activation state.

Aratani, on the contrary, has a set read control signal frequency which is based on temperature, and determines the number of lines of non-updated pixels to scan based partially on the set read control frequency. Aratani does not disclose or suggest a means for providing a read control signal, the frequency of which depends on the total number of rows of the identified row sets. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 8 depends from claim 7 and is believed to be patentable for at least the same reasons cited above for claim 7. Accordingly, withdrawal of this rejection is respectfully requested.

CONCLUSION


In view of the above amendment, the pending application is believed to be in condition for allowance.

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, any necessary extension of time is hereby requested. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

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